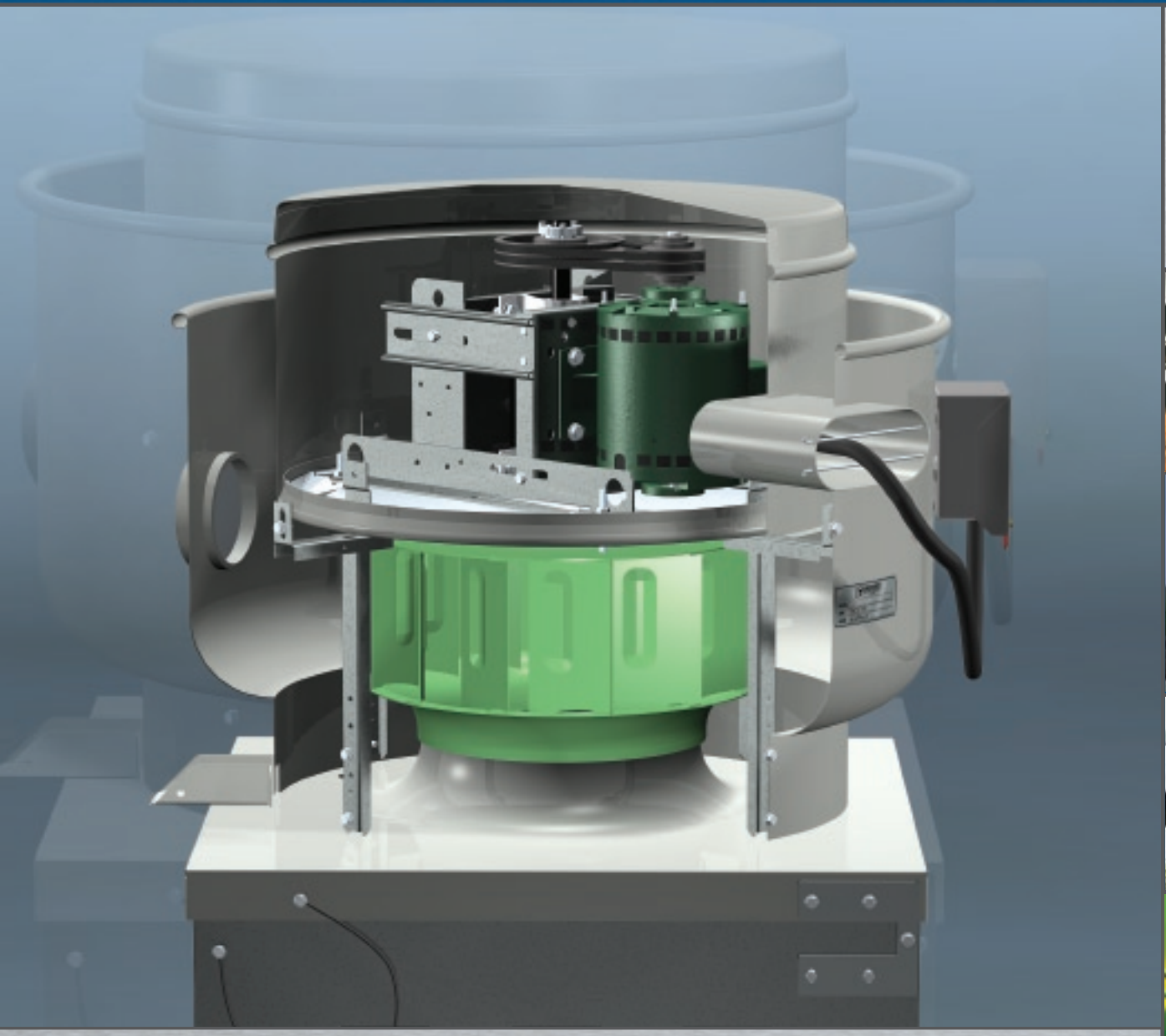
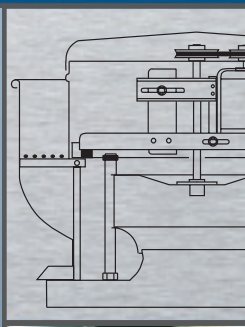
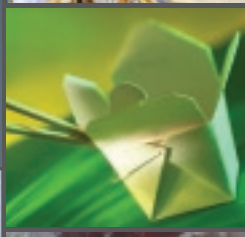
Centrifugal Exhaust Fans

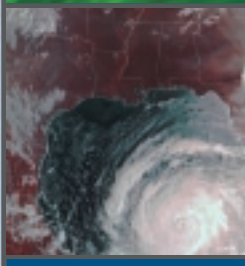
Model USGF - Ultimate Steel Grease Fan

- Charbroilers, Solid Fuel Cooking, Oriental Cooking and High Wind Applications









GREENHECK®

Building Value in Air.

February
2008

Ultimate Steel Grease Exhaust Fan

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Designed for severe grease applications...

When you choose a Greenheck USGF fan, you have selected a fan with the industry's best performance and durability for heavy grease applications (as stated in NFPA's Chapter 11 restaurants and food service where high amounts of grease and/or solid fuels are used). The USGF fan is specifically designed for severe grease applications and to discharge air directly away from the mounting surface.

- Leakproof construction for the entire life of the fan utilizing a one-piece steel windband that is continuously welded to the curb cap.
- Only spun steel fan in the industry.
- Performance up to 3.25 in. wg (810 Pa) and 6,800 cfm (11,550 m3/hr).
- Withstands the most severe cleaning conditions.
- Most advanced motor cooling of any grease fan. Capable of continuously handling 400° F airstream temperatures.
- Performance as cataloged is assured. All fan sizes are tested in our AMCA Accredited Laboratory, and all models are licensed to bear the AMCA Sound and Air performance seals.
- UL Listed for electrical and grease applications.
- Greenheck subjects these products to extensive life testing, assuring you that the fans will provide many years of reliable performance.
- Only kitchen exhaust fan to meet Miami-Dade Test protocols for large Missile Impact Test.

Greenheck Fan Corporation certifies that the Model USGF fan shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. The certified ratings for Model USGF are shown on pages 10 to 18.

c UL us LISTED

Model USGF is listed for electrical (UL/cUL 705) File no. E40001

Model USGF is listed for grease removal (UL/cUL 762) File no. MH11745

Leading-Edge Technical Support

When you need extensive product and IOM (Installation and Operating Manual) information, our products are supported by the industry's best product literature, electronic media and computer aided selection program (CAPS). You'll also find this information on our website at www.greenheck.com

You can always count on personal service and expertise from our national and international representative organization. To locate your nearest Greenheck representative, call 715-359-6171 or visit our website at www.greenheck.com

World-Class Manufacturing

Greenheck's skilled production workers use cost-effective machines and unique dies designed and built by our own engineers to add innovative features and greater strength to our centrifugal exhaust fans. Our advanced manufacturing processes and quality control procedures always ensure the highest product quality. And just to be sure you get the peace-of-mind you expect when you specify Greenheck, our assembly inspectors test run and monitor every fan before it leaves the factory. Results of these tests are kept in permanent records for future reference.

Severe Weather Applications

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Forceful winds and wind-borne debris are the cause of most hurricane damage. Hurricane winds start at 75 mph. At speeds of 140 mph wind can exert a 130 pound per square foot pressure or 900 pounds of force on a fan and curb. Forceful winds are not the only problem; wind-borne debris can also cause detrimental effects to objects and structures.

Miami-Dade County has the strictest test protocols in the country for wind-borne debris and wind loading tests. Greenheck has gone one step further with the model USGF by third-party testing to the Miami-Dade County Test Protocols.

These protocols were designed to protect against wind-born debris and severe wind loads.

- Structural Performance per Dade County Protocol TAS 202 (ASTM E-330).
- Large Missile Impact Testing per Dade County Protocol TAS 201.

Structural Performance Load: A static load that is 1.5 times the design load (195 pounds per square foot pressure) is applied both positive and negative to simulate wind force loads in each direction.

Large Missile Impact Test: Is required when objects are located 30 feet or less from the ground. The test unit is impacted three times with a piece of lumber (2 in. x 4 in. x 6 ft) weighing approximately nine pounds and traveling at 34 mph. This simulates wind-borne debris striking the fan.

Miami-Dade County test protocols: Greenheck has gone the extra mile and worked with Miami-Dade County to design a High Velocity Hurricane Zone standard for rooftop fans. The USGF has become the first rooftop fan certified and approved by the Miami Dade Building Code Compliance office and Texas Department of Insurance for use in hurricane zones. The certifications can be viewed on the Miami-Dade County website under NOA #07-0503.06 or the Texas Department of Insurance Windstorm website.

When severe weather is a threat, don't specify anything less than the Greenheck model USGF and the SD curb.

Standard Construction Features

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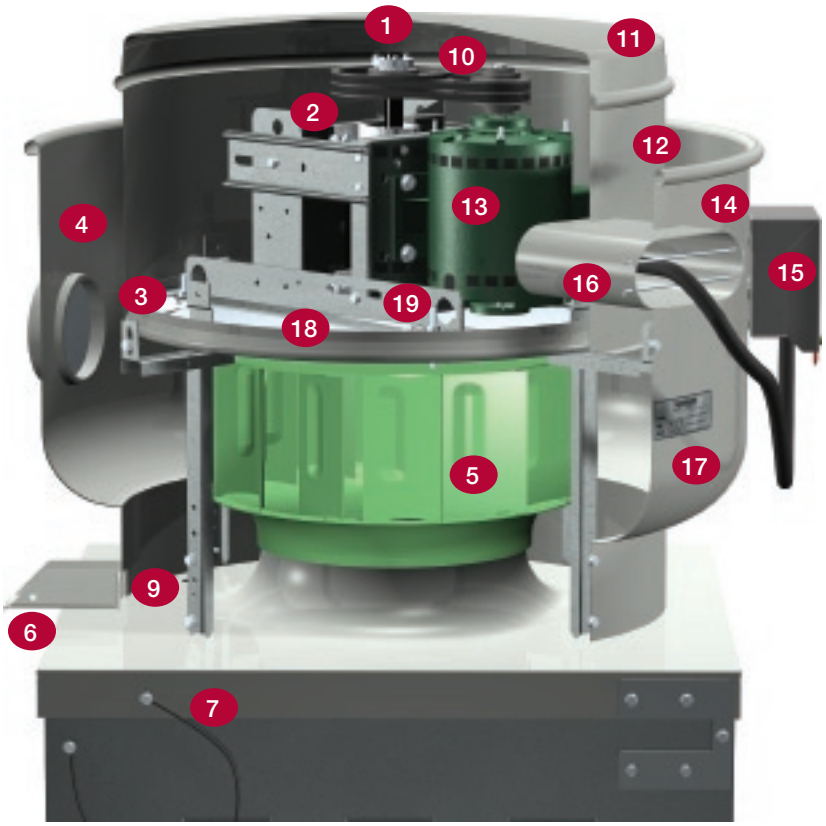
1. **Fan Shaft** - Is 1-inch minimum in diameter and is precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed, which results in longer fan life.
2. **Bearings** - Lubricatable cast pillow block and are air handling quality extended life L10 > 100,000 hours (L50 average life > 500,000 hours)
3. **True Vibration Isolation** - Lowers sound levels and reduces vibration, which increases the fans life since true vibration has no steel to steel contact.
4. **Clean Out Port** - Allows the outside of the wheel to be cleaned through a four-inch diameter removable plug in the windband.
5. **Non-Stick Coated Steel Wheel** - Heavy weight steel wheel with a dry lubricate coating eliminates imbalance in heavy grease applications. The steel wheel is a backward-inclined, non-overloading centrifugal type.
6. **Drain Trough** - All grease and water is collected at one-point for easy disposal.
7. **Curb Cap with Mounting Holes** - Prepunched mounting holes in the steel curb cap to ensure correct attachment to the roof.
8. **Hinged Curb Cap with Cables** - Allows entire fan to tilt away for access to wheel and ductwork for inspection and cleaning. Shipped for field assembly.
9. **Leakproof Construction** - One-piece fully welded windband to curb cap. Assures no grease will leak onto roof through the fan's seams.
10. **Drive Assembly** - Dual belts, pulleys, and keys are oversized 150% of driven horsepower. Machined cast steel pulleys are adjustable for final system balancing. Belts are static free and oil resistant.
11. **Motor Cover** - Is easily removed for access to the steel motor compartment and drive assembly.
12. **Powder Coated** - Unit is constructed of a minimum of 16 gauge galvaneal steel. Entire unit is powder coated with a chemical resistant Permatector finish.
13. **Motor** - Carefully matched to the fan load and is mounted out of air stream.
14. **Windband** - Unique spun from galvaneal steel achieves superior strength & consistent material thickness.
15. **Nema-3R Disconnect Switch Mounted & Wired** - Motor and switch are prewired to specified voltage.
16. **Motor Cooling Tube** - Maximum motor life is achieved through positive motor cooling with fresh outside air being continuously drawn through the large breather tube directly over the motor.
17. **Name Plate** - Exact model and serial identification on a permanent stamped aluminum plate.
18. **Heat Baffle** - Extends motor life by reducing the amount of heat that penetrates through the bottom of the motor support pan.
19. **Lifting Lugs** - Located under motor compartment for ease of lifting unit during installation.



Options and Accessories

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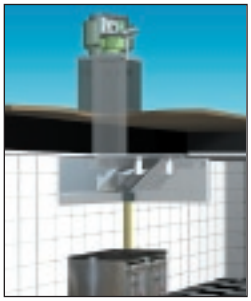
Self Draining Grease System: Drain grease and rain water back through the ductwork into the specially designed Greenheck hood. The hood then channels grease and rain water into the restaurant's floor grease trap.



Coatings: Wide variety of coatings and colors are available for decorative to acidic applications.

PERMATECTOR®

Permatector™ is our standard coating. Typically used for applications that require corrosion resistance in indoor and outdoor environments.

HI-PRO POLYESTER

Hi-Pro Polyester is resistant to salt water, chemical fumes and moisture in more corrosive atmospheres. Typically used for applications that require superior chemical resistance, excellent abrasion and outdoor UV protection. This coating exceeds protective qualities of Air Dried Heresite and Air Dry Phenolic.

HI-PRO POLYESTER

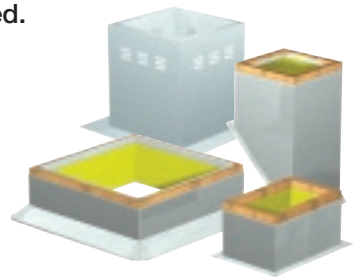
BAKED ENAMEL

Baked Enamel Decorative Coatings are heat cured enamels applied either as wet paints or electrostatic powders. Customers can choose from 16 standard decorative colors or color match any color.

Windband Extension: Tube that raises fans discharge an additional 36 in. for special code requirements.

Curb Seal: Rubber seal between fan and curb to assure proper sealing when attached to a curb.

Roof Curbs: Wide variety of roof curbs are available for mounting the fan to the roof, including: vented, flanged, pitched.

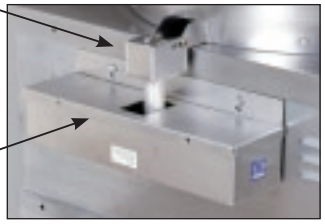


Vented Curb Extension: Mounts between roof curb and roof mounted fans to meet NFPA requirements of 40 in. minimum discharge above the roof when mounted on a minimum 8 in. high roof curb.

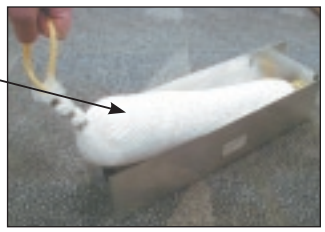
Severe Duty Curb: Model SD is specifically designed for the optional hurricane use. It is attached directly to the building structure with extremely high structural design load requirements. Maximum design load is 130 psf.

Drain Connection: Allows for single point drainage of grease, water or other residues.

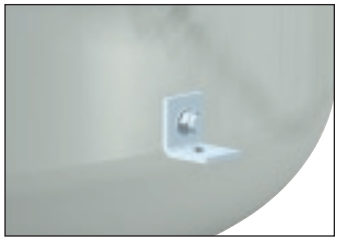
Grease Trap: Aluminum trap designed to collect grease residue to avoid drainage onto roof surface.



Grease Trap with Absorbent Material: Same as above with an absorbent material to collect grease residue and repel water for easy periodic disposal.



Tie Down Points: Four brackets located on the windband for securing the fan in heavy wind applications.



Velocity Accelerator: Increases fan outlet/ discharge velocity. Up to 3,000 feet per minute.

Kitchen Ventilation Solutions

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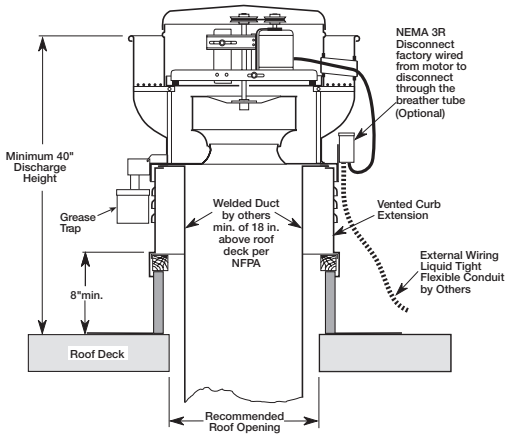
Typical Installation - Commercial Kitchen (Grease)

The USGF is specifically designed for heavy restaurant grease and food service applications. These fans are UL and cUL Listed for grease removal and have been tested under high temperature (400° F) and abnormal flare-up (600° F) conditions.

Due to high temperatures and grease-laden airstreams in commercial kitchen ventilation, system designers must be aware of governing codes and guidelines. The National Fire Protection Association (NFPA) is the primary source upon where many codes for commercial kitchens ventilation are based. Selected information from NFPA is shown below. Local code authorities should be consulted before proceeding with any kitchen ventilation project.



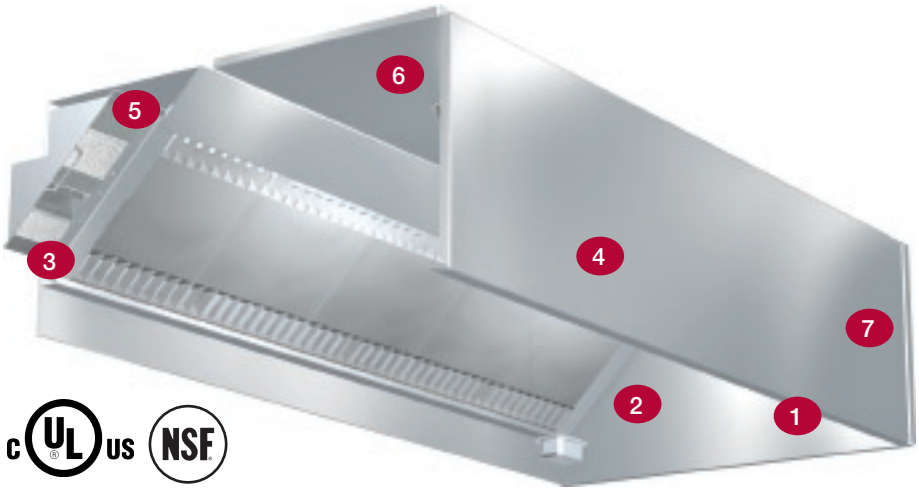
Exhaust fans used in kitchen ventilation applications must have external wiring. (Wiring must not be installed in airstream.)

Installation must include a means for inspecting, cleaning and servicing the exhaust fan. (e.g. Hinged Curb Cap)

No dampers are to be installed in the system.

Our Hoods and Filters.

1. Greenheck's Performance Enhancing Lip (PEL) helps direct air to the filter and improves capture and performance
2. Full length, fully welded integral grease trough
3. An integral 3-inch airspace that meets NFPA 96 clearance requirements against limited combustibles
4. Constructed of 304 / 430 18 ga. stainless steel.
5. Standing seam construction for added strength
6. Redesigned flat light panels allows for lights to be installed vertically and simplified field installation
7. Fully welded joints - no caulk



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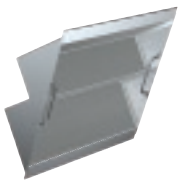
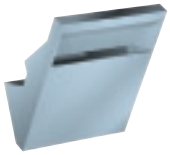
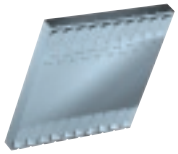


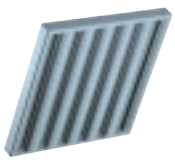
Grease Grabber™ dual filtration system works with the Grease-X-Tractor™ filter to remove 80% of the grease from the kitchen exhaust. Available in stainless steel.



The high velocity cartridge filters offers dry cartridge performance at a lower cost. Available in aluminum or stainless steel.



The Grease-X-Tractor™ high efficiency filter has twice the grease extraction capability of a baffle filter. Available in aluminum or stainless steel.



Baffle type filters are the traditional choice for inexpensive grease removal. Available in aluminum, stainless steel, or non-stick coated.

Typical Installation and Anchoring

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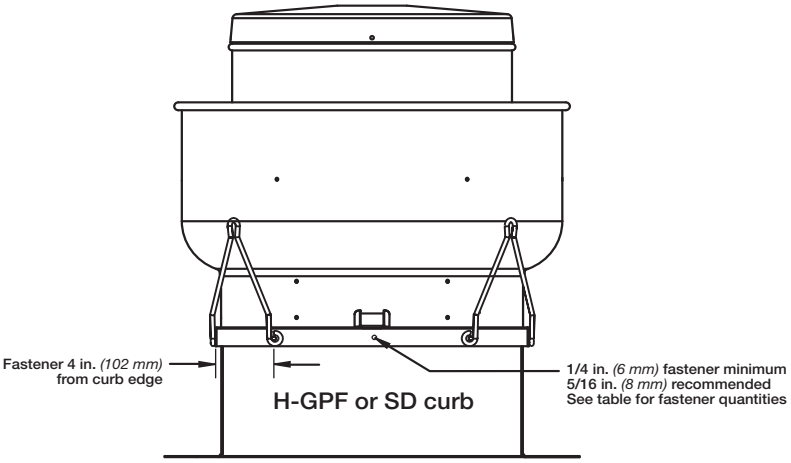
Typical Mounting - Fan to Curb

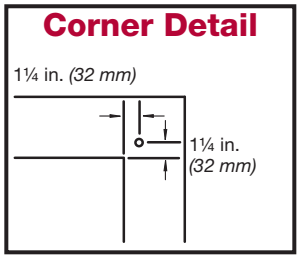


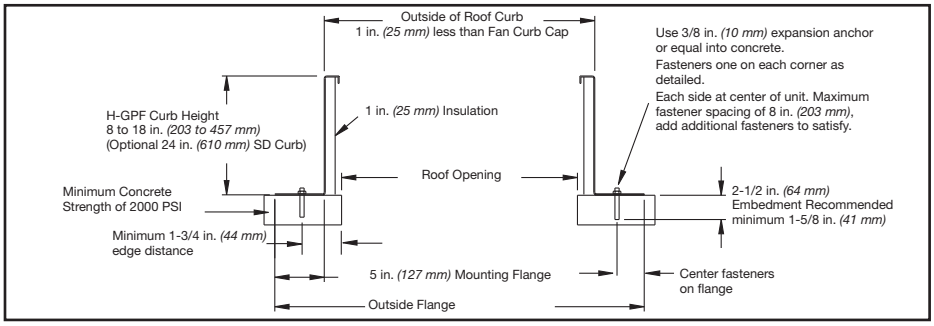
USGF Size	Fasteners Per Side	Total Fasteners
140 - 160	5	20
180 - 200	5	20

Fasteners on each side of the fan are to be installed with one fastener 4 in. *(102 mm)* from each edge and one fastener centered. The remaining fasteners are to be equally spaced.

Concrete Deck Anchoring

Corner Detail





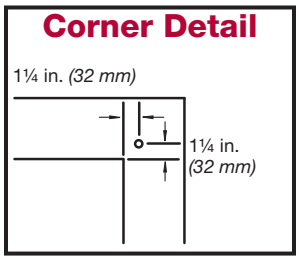
USGF Size	Fan Curb Cap	Roof Opening	Fasteners Per Side	Outside Flange
141 - 161	22 x 22 *(559 x 559)*	18½ x 18½ *(470 x 470)*	5	31 x 31 *(787 x 787)*
180 - 200	30 x 30 *(762 x 762)*	20½ x 20½ *(521 x 521)*	7	39 x 39 *(991 x 991)*

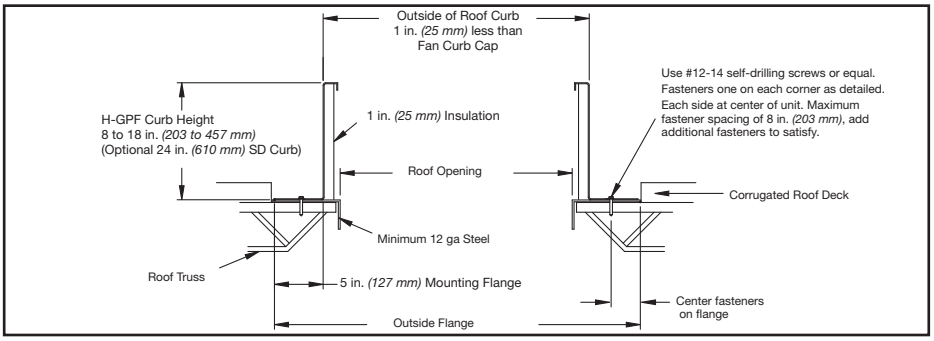
All dimensions in inches (millimeters).

Typical Anchoring

Metal Building/Steel Deck Anchoring

Corner Detail



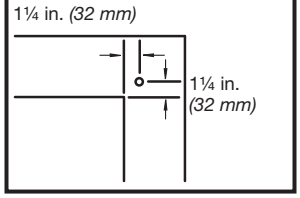


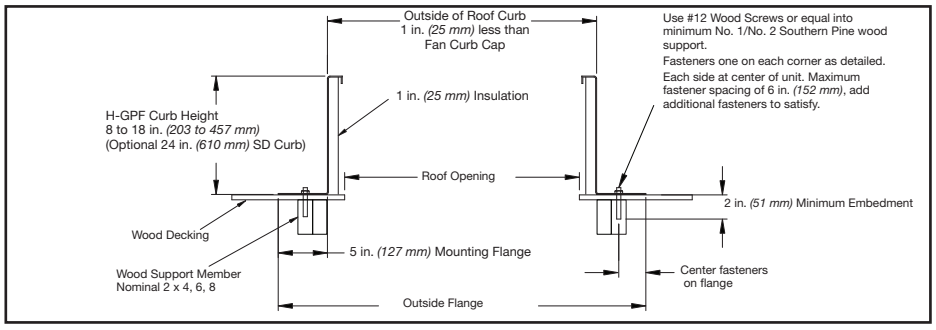
USGF Size	Fan Curb Cap	Roof Opening	Fasteners Per Side	Outside Flange
141 - 161	22 x 22 *(559 x 559)*	18½ x 18½ *(470 x 470)*	5	31 x 31 *(787 x 787)*
180 - 200	30 x 30 *(762 x 762)*	20½ x 20½ *(521 x 521)*	7	39 x 39 *(991 x 991)*

All dimensions in inches (millimeters).

Wood Deck Anchoring

Corner Detail





USGF Size	Fan Curb Cap	Roof Opening	Fasteners Per Side	Outside Flange
140 - 160	22 x 22 *(559 x 559)*	18½ x 18½ *(470 x 470)*	7	31 x 31 *(787 x 787)*
180 - 200	30 x 30 *(762 x 762)*	20½ x 20½ *(521 x 521)*	7	39 x 39 *(991 x 991)*

All dimensions in inches (millimeters).

Model Number Code

The Model number system is designed to completely identify the fan. The correct code letters must be specified to designate the correct configuration. The remainder of the model number is determined by the size and performance selected from the following pages.

USGF - 140 HP - 5

Configuration

Ultimate Steel Grease Fan

Fan Size

140 through 200

Motor HP

4 = ¼ 10 = 1 30 = 3
3 = ⅓ 15 = 1½ 50 = 5
5 = ½ 20 = 2 75 = 7½
7 = ¾

Pressure Level

HP - High Pressure Wheel

XP - Extended High Pressure Wheel

USGF-140 - Belt Drive

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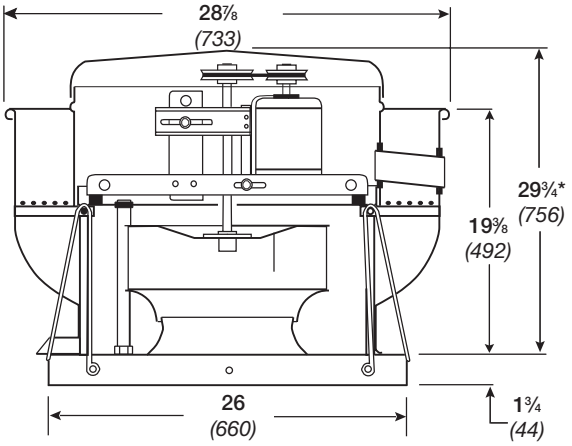

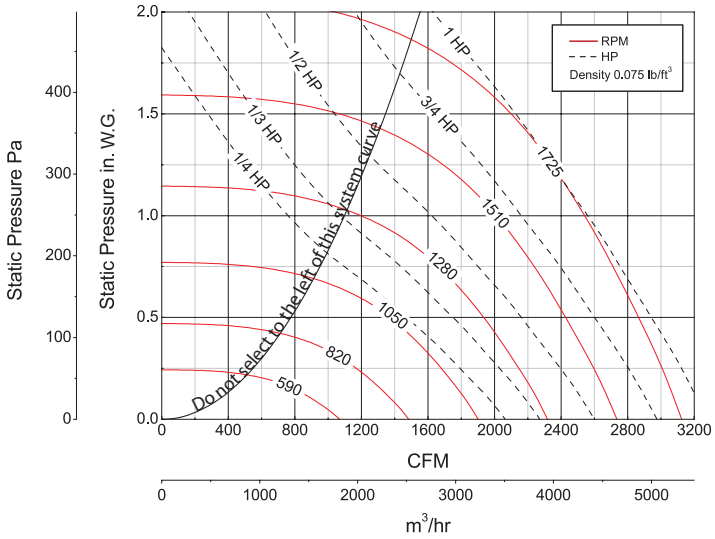

Roof Opening = 18½ x 18½ *(470 x 470)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 125 lb. *(57 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	1.75
USGF-140-4	1/4	590	CFM	1069	851								
			BHP	0.04	0.04								
			Sones	5.0	4.5								
		715	CFM	1295	1130	885							
			BHP	0.06	0.07	0.07							
			Sones	6.0	6.0	5.1							
		840	CFM	1521	1387	1217	969						
			BHP	0.10	0.11	0.11	0.11						
			Sones	7.1	7.3	6.8	6.2						
		965	CFM	1748	1635	1499	1333	1103					
			BHP	0.15	0.16	0.17	0.17	0.17					
			Sones	8.6	8.7	8.5	8.1	7.7					
		1105	CFM	2001	1906	1793	1667	1515	998				
			BHP	0.23	0.24	0.25	0.26	0.26	0.23				
			Sones	10.9	10.8	10.6	10.3	10.0	9.6				
USGF-140-3	1/3	1210	CFM	2192	2106	2006	1896	1773	1443				
			BHP	0.30	0.31	0.32	0.33	0.34	0.34				
			Sones	12.2	12.2	11.7	11.6	11.2	10.9				
USGF-140-5	1/2	1290	CFM	2337	2258	2166	2065	1957	1691	1221			
			BHP	0.36	0.38	0.39	0.40	0.41	0.42	0.37			
			Sones	13.2	13.3	12.7	12.6	12.3	12.0	11.3			
		1390	CFM	2518	2445	2362	2271	2174	1949	1643			
			BHP	0.45	0.47	0.48	0.50	0.51	0.52	0.51			
			Sones	14.9	14.7	14.2	13.2	12.9	12.1	11.0			
USGF-140-7	3/4	1495	CFM	2708	2640	2565	2483	2396	2202	1967	1617		
			BHP	0.56	0.58	0.6	0.61	0.62	0.64	0.65	0.61		
			Sones	17.2	16.5	16.3	15.6	13.9	12.5	12.2	10.8		
		1595	CFM	2889	2826	2757	2683	2602	2430	2225	1968	1568	
			BHP	0.69	0.70	0.72	0.74	0.75	0.77	0.79	0.78	0.72	
			Sones	20	19.0	18.5	19.5	16.1	13.3	12.3	12.6	11.6	
USGF-140-10	1	1725	CFM	3125	3066	3005	2936	2865	2711	2539	2339	2085	1704
			BHP	0.87	0.88	0.90	0.92	0.94	0.97	0.99	1.00	0.98	0.91
			Sones	26	23	22	24	24	15.1	13.4	14.3	13.8	13.8

MAXIMUM BHP AT A GIVEN RPM = (RPM/1726)³
MAXIMUM RPM = 1725
TIP SPEED (ft/min.) = RPM x 3.829
MAXIMUM MOTOR FRAME SIZE = 145T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/1.72

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-140HP - Belt Drive

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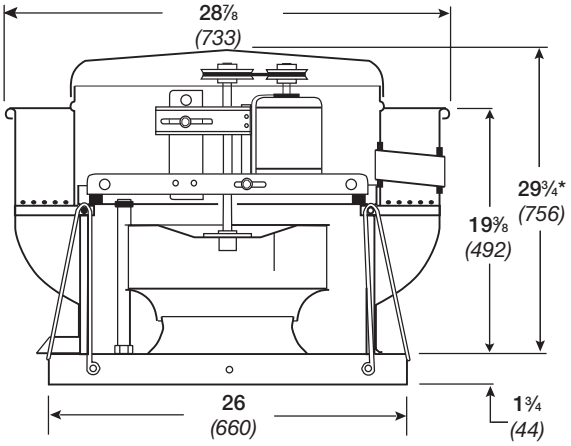
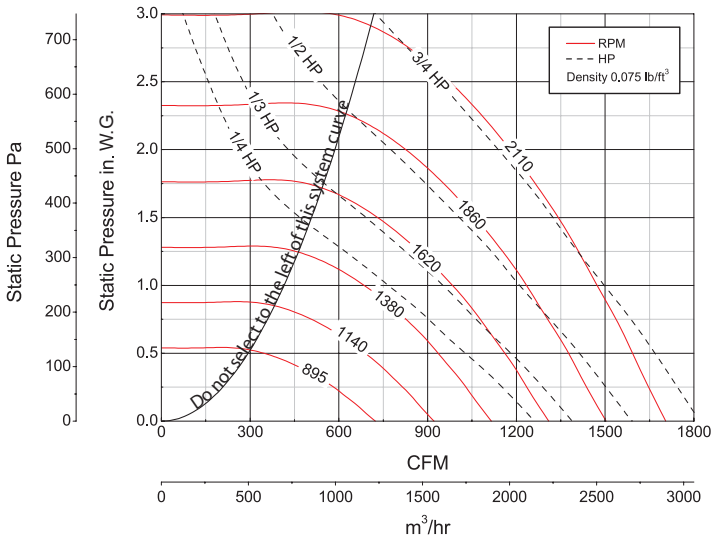
Building Value in Air.





Roof Opening = 18½ x 18½ *(470 x 470)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 125 lb. *(57 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

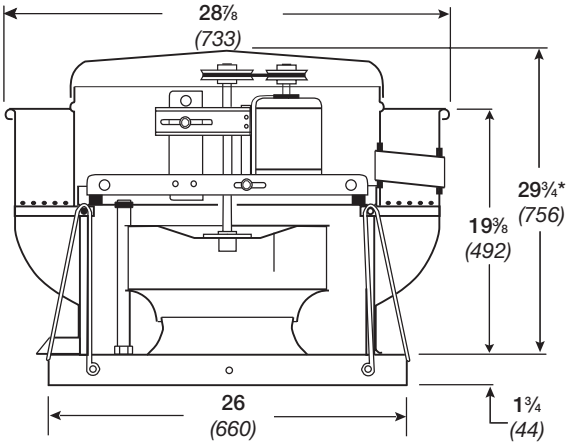
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75
USGF-140HP-4	1/4	895	CFM	331									
			BHP	0.06									
			Sones	6.1									
		1037	CFM	566									
			BHP	0.10									
			Sones	6.7									
		1179	CFM	733	563								
			BHP	0.13	0.14								
			Sones	8.9	9.2								
		1321	CFM	878	756	591							
			BHP	0.18	0.19	0.19							
			Sones	12.1	11.6	13.6							
		1465	CFM	1016	920	798	642						
			BHP	0.24	0.26	0.26	0.26						
			Sones	14.2	13.5	13.2	15.5						
USGF-140HP-3	1/3	1605	CFM	1146	1063	965	846	704					
			BHP	0.31	0.33	0.34	0.34	0.34					
			Sones	15.2	14.4	14.2	14.0	15.2					
USGF-140HP-5	1/2	1725	CFM	1256	1178	1098	999	879	747				
			BHP	0.38	0.40	0.42	0.43	0.43	0.42				
			Sones	16.1	15.4	15.0	14.9	14.7	15.7				
		1845	CFM	1363	1292	1219	1137	1042	924	800			
			BHP	0.46	0.48	0.50	0.52	0.52	0.52	0.51			
			Sones	17.0	16.6	16.2	16.0	15.9	15.6	16.1			
USGF-140HP-7	3/4	1960	CFM	1463	1399	1330	1260	1176	1086	970	854		
			BHP	0.54	0.57	0.59	0.61	0.62	0.63	0.62	0.62		
			Sones	18.1	17.7	17.4	17.2	17.1	17.0	16.8	16.9		
		2035	CFM	1528	1468	1402	1335	1261	1175	1077	965	826	
			BHP	0.60	0.63	0.66	0.68	0.69	0.70	0.70	0.69	0.67	
			Sones	18.9	18.5	18.2	18.0	18.0	17.8	17.7	17.5	17.8	
		2110	CFM	1592	1536	1473	1409	1341	1262	1178	1073	965	804
			BHP	0.67	0.70	0.72	0.75	0.77	0.78	0.78	0.78	0.77	0.73
			Sones	19.8	19.3	19.1	19.0	18.9	18.8	18.6	18.5	18.3	20

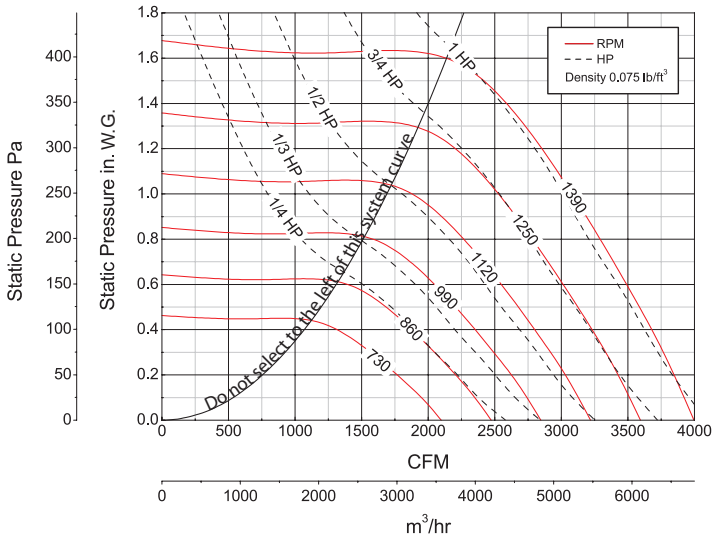
MAXIMUM BHP AT A GIVEN RPM = (RPM/2285)³
MAXIMUM RPM = 2110
TIP SPEED (ft/min.) = RPM x 3.829
MAXIMUM MOTOR FRAME SIZE = 145T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/1.72

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-160 - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 18½ x 18½ *(470 x 470)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 131 lb. *(59 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

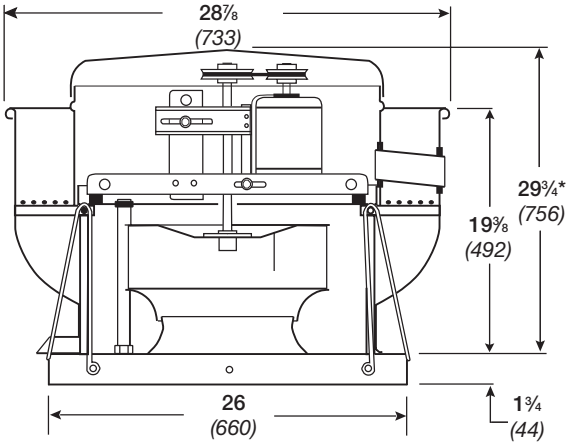
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0	0.125	0.25	0.375	0.5	0.625	0.75	1	1.25	1.5
USGF-160-4	1/4	730	CFM	2098	1905	1669	1389						
			BHP	0.13	0.15	0.15	0.15						
			Sones	8.1	8.0	7.8	7.8						
		778	CFM	2236	2058	1843	1596						
			BHP	0.16	0.18	0.19	0.18						
			Sones	8.9	8.7	8.5	8.4						
		826	CFM	2374	2209	2010	1790	1512					
			BHP	0.20	0.22	0.22	0.22	0.21					
			Sones	9.9	9.6	9.3	9.1	9.0					
		875	CFM	2515	2362	2177	1974	1744	1365				
			BHP	0.23	0.26	0.26	0.26	0.26	0.24				
			Sones	11.0	10.6	10.1	9.9	9.7	9.7				
USGF-160-3	1/3	965	CFM	2774	2637	2477	2300	2109	1893	1584			
			BHP	0.31	0.34	0.35	0.35	0.35	0.34	0.33			
			Sones	12.4	12.0	11.5	11.2	10.8	10.6	10.5			
USGF-160-5	1/2	1038	CFM	2984	2857	2712	2552	2382	2199	1992			
			BHP	0.39	0.42	0.43	0.44	0.44	0.43	0.43			
			Sones	13.7	13.3	12.8	12.4	12.1	11.8	11.6			
		1110	CFM	3191	3072	2941	2796	2641	2475	2297	1770		
			BHP	0.47	0.51	0.53	0.53	0.54	0.53	0.52	0.49		
			Sones	15.0	14.6	14.2	13.8	13.5	13.1	12.9	12.2		
USGF-160-7	3/4	1188	CFM	3415	3304	3186	3053	2911	2764	2606	2246		
			BHP	0.58	0.62	0.64	0.65	0.65	0.66	0.65	0.64		
			Sones	16.7	16.3	15.8	15.4	15.0	14.7	14.5	14.0		
		1265	CFM	3636	3532	3426	3301	3172	3036	2894	2583	2163	
			BHP	0.70	0.74	0.77	0.78	0.79	0.79	0.79	0.78	0.75	
			Sones	18.5	18.1	17.7	17.2	16.8	16.5	16.3	15.8	15.2	
USGF-160-10	1	1328	CFM	3817	3718	3619	3502	3383	3253	3124	2843	2510	
			BHP	0.81	0.85	0.89	0.90	0.91	0.91	0.92	0.90	0.89	
			Sones	20	19.6	19.2	18.7	18.3	18.0	17.8	17.4	16.9	
		1390	CFM	3996	3901	3806	3698	3584	3464	3340	3078	2785	2394
			BHP	0.93	0.97	1.01	1.03	1.04	1.04	1.05	1.04	1.03	1.00
			Sones	22	21	21	20	19.9	19.6	19.4	19.0	18.6	18.0

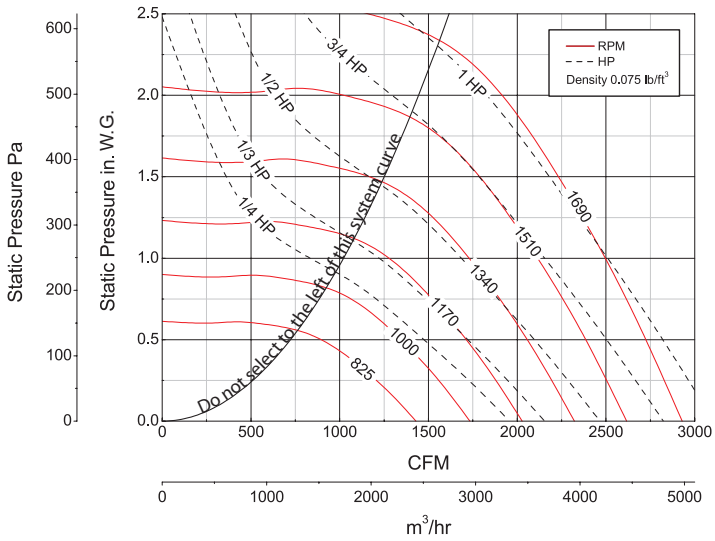
MAXIMUM BHP AT A GIVEN RPM = (RPM/1365)³
MAXIMUM RPM = 1390
TIP SPEED (ft/min.) = RPM x 4.352
MAXIMUM MOTOR FRAME SIZE = 145T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/1.72

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-160HP - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 18½ x 18½ *(470 x 470)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 131 lb. *(59 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

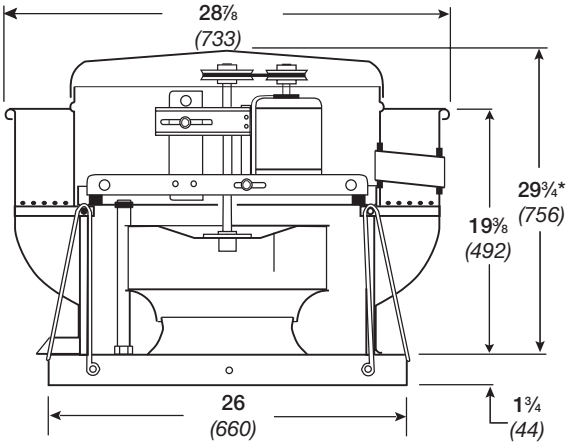
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0.5	0.625	0.75	0.875	1	1.25	1.5	1.75	2	2.25
USGF-160HP-4	1/4	825	CFM	889									
			BHP	0.12									
			Sones	7.0									
		910	CFM	1129	956								
			BHP	0.16	0.16								
			Sones	8.3	7.8								
		995	CFM	1331	1208	1042							
			BHP	0.21	0.21	0.21							
			Sones	9.6	9.3	8.8							
		1065	CFM	1487	1377	1252	1093						
			BHP	0.25	0.26	0.26	0.26						
			Sones	11.0	10.6	10.2	9.8						
USGF-160HP-3	1/3	1165	CFM	1697	1608	1504	1395	1252					
			BHP	0.32	0.33	0.34	0.34	0.34					
			Sones	12.8	12.7	12.2	11.7	11.3					
USGF-160HP-5	1/2	1255	CFM	1882	1799	1715	1617	1519	1218				
			BHP	0.40	0.41	0.42	0.43	0.43	0.42				
			Sones	13.1	12.8	12.5	12.0	11.5	10.6				
		1340	CFM	2053	1975	1897	1816	1724	1513				
			BHP	0.48	0.49	0.50	0.51	0.52	0.52				
			Sones	14.4	13.8	13.3	12.8	12.3	11.3				
USGF-160HP-7	3/4	1441	CFM	2253	2180	2108	2036	1961	1790	1577			
			BHP	0.59	0.60	0.61	0.63	0.64	0.65	0.65			
			Sones	16.3	15.8	15.2	14.7	14.3	13.5	12.3			
		1535	CFM	2433	2368	2301	2233	2165	2015	1855	1638		
			BHP	0.70	0.72	0.73	0.74	0.76	0.78	0.79	0.78		
			Sones	18.1	17.7	17.2	16.8	16.4	15.7	14.9	13.5		
USGF-160HP-10	1	1610	CFM	2573	2516	2452	2387	2322	2190	2037	1863	1651	
			BHP	0.80	0.82	0.83	0.85	0.86	0.89	0.90	0.91	0.90	
			Sones	19.6	19.2	18.8	18.4	18.1	17.5	16.9	15.8	14.3	
		1690	CFM	2722	2671	2611	2550	2488	2365	2228	2082	1899	1664
			BHP	0.92	0.94	0.95	0.97	0.98	1.01	1.03	1.05	1.05	1.03
			Sones	21	21	21	20	20	19.5	19.1	18.6	16.9	15.0

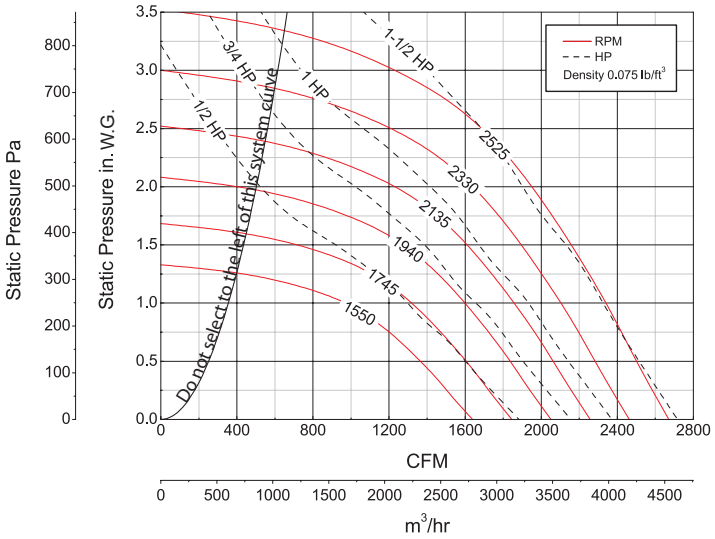
MAXIMUM BHP AT A GIVEN RPM = (RPM/1660)³
MAXIMUM RPM = 1690
TIP SPEED (ft/min.) = RPM x 4.352
MAXIMUM MOTOR FRAME SIZE = 145T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/1.72

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-160XP - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 18½ x 18½ *(470 x 470)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 131 lb. *(59 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

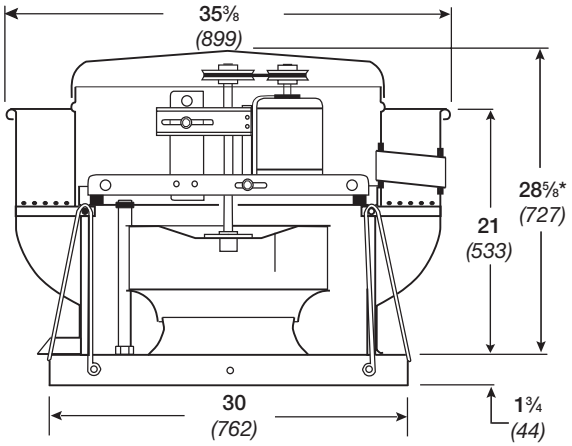
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in nches wg 1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25
USGF-160XP-5	1/2	1550	CFM	968									
			BHP	0.34									
			Sones	10.0									
		1648	CFM	1157	854								
			BHP	0.42	0.39								
			Sones	11.1	10.2								
		1750	CFM	1322	1116	726							
			BHP	0.52	0.49	0.43							
			Sones	12.1	11.4	10.9							
USGF-160XP-7	3/4	1880	CFM	1515	1359	1139	744						
			BHP	0.65	0.63	0.60	0.52						
			Sones	13.7	13.1	12.3	12.2						
		1942	CFM	1599	1456	1271	984						
			BHP	0.71	0.70	0.68	0.63						
			Sones	14.3	13.9	13.2	12.6						
		2005	CFM	1684	1552	1392	1161	777					
			BHP	0.77	0.78	0.76	0.72	0.63					
			Sones	15.0	14.7	14.1	13.4	13.6					
USGF-160XP-10	1	2138	CFM	1861	1743	1611	1451	1226	869				
			BHP	0.93	0.95	0.94	0.91	0.87	0.78				
			Sones	16.6	16.4	15.9	15.4	14.8	15.1				
		2205	CFM	1946	1834	1713	1578	1395	1127	634			
			BHP	1.01	1.03	1.04	1.01	0.99	0.92	0.73			
			Sones	17.5	17.3	17.0	16.4	15.9	15.5	16.7			
USGF-160XP-15	1½	2310	CFM	2076	1974	1865	1741	1597	1415	1134	644		
			BHP	1.17	1.18	1.2	1.18	1.16	1.12	1.04	0.83		
			Sones	19.0	18.7	18.5	18.1	17.5	17.1	16.8	18.4		
		2432	CFM	2226	2134	2031	1926	1804	1660	1483	1225	826	
			BHP	1.36	1.36	1.38	1.40	1.38	1.35	1.31	1.23	1.07	
			Sones	21	20	20	20	19.6	19.1	18.7	18.7	19.9	
		2525	CFM	2339	2250	2155	2056	1946	1828	1676	1487	1221	810
			BHP	1.52	1.52	1.54	1.56	1.56	1.53	1.50	1.45	1.35	1.16
			Sones	22	22	22	22	21	21	20	20	20	22

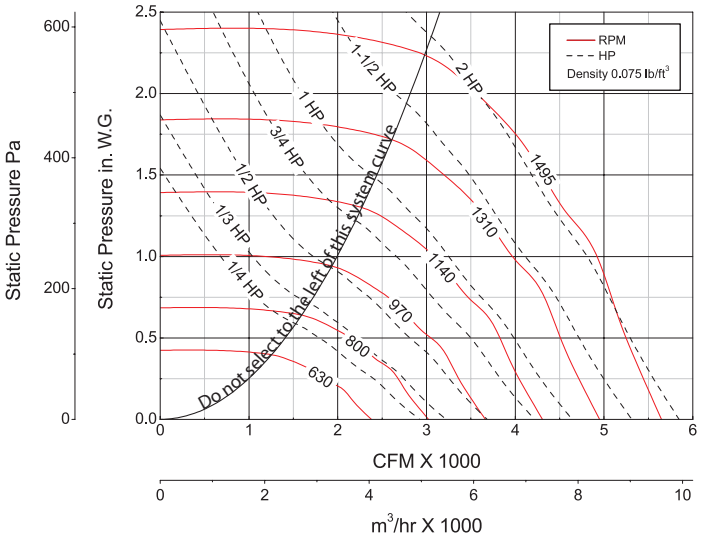
MAXIMUM BHP AT A GIVEN RPM = (RPM/2170)³
MAXIMUM RPM = 2525
TIP SPEED (ft/min.) = RPM x 3.534
MAXIMUM MOTOR FRAME SIZE = 145T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/1.72

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-180 - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 20½ x 20½ *(521 x 521)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 190 lb. *(86 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

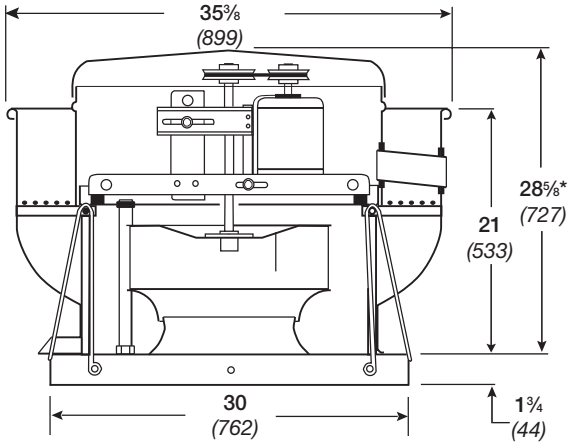
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0	0.125	0.25	0.5	0.75	1	1.25	1.5	1.75	2
USGF-180-4	1/4	630	CFM	2380	2154	1861							
			BHP	0.13	0.15	0.16							
			Sones	7.1	6.4	5.5							
		745	CFM	2815	2617	2448	1763						
			BHP	0.22	0.24	0.26	0.25						
			Sones	9.2	8.6	8.1	7.1						
USGF-180-3	1/3	820	CFM	3098	2916	2759	2257						
			BHP	0.30	0.32	0.34	0.34						
			Sones	11.2	10.4	10.0	9.0						
USGF-180-5	1/2	940	CFM	3551	3389	3243	2879	2363					
			BHP	0.45	0.47	0.49	0.52	0.50					
			Sones	13.8	13.5	13.1	12.4	11.2					
USGF-180-7	3/4	1010	CFM	3816	3664	3526	3242	2799	2105				
			BHP	0.56	0.58	0.61	0.65	0.64	0.58				
			Sones	15.4	15.2	14.9	14.7	13.7	11.8				
		1075	CFM	4061	3919	3786	3554	3141	2652				
			BHP	0.67	0.70	0.73	0.78	0.78	0.75				
			Sones	16.5	16.2	15.8	151.5	14.7	13.3				
USGF-180-10	1	1185	CFM	4477	4348	4224	4005	3703	3336	2841			
			BHP	0.90	0.93	0.96	1.01	1.04	1.04	0.99			
			Sones	18.5	17.9	17.1	16.5	16.0	15.2	14.4			
USGF-180-15	1½	1275	CFM	4817	4697	4578	4369	4163	3799	3437	2930		
			BHP	1.12	1.15	1.19	1.24	1.30	1.30	1.28	1.22		
			Sones	21	20	19.5	18.7	18.2	17.5	16.7	15.9		
		1360	CFM	5138	5026	4913	4710	4532	4232	3912	3537	3023	
			BHP	1.36	1.39	1.43	1.49	1.56	1.58	1.58	1.54	1.46	
			Sones	23	23	22	21	21	20	19.2	18.3	17.3	
USGF-180-20	2	1430	CFM	5402	5296	5189	4993	4819	4593	4270	3968	3567	3001
			BHP	1.58	1.62	1.66	1.72	1.79	1.83	1.83	1.83	1.76	1.66
			Sones	25	25	25	24	23	22	22	21	19.5	18.2
		1495	CFM	5648	5546	5443	5254	5082	4921	4598	4313	3983	3564
			BHP	1.80	1.84	1.89	1.96	2.02	2.10	2.10	2.10	2.06	1.99
			Sones	28	27	27	26	25	25	24	23	22	21

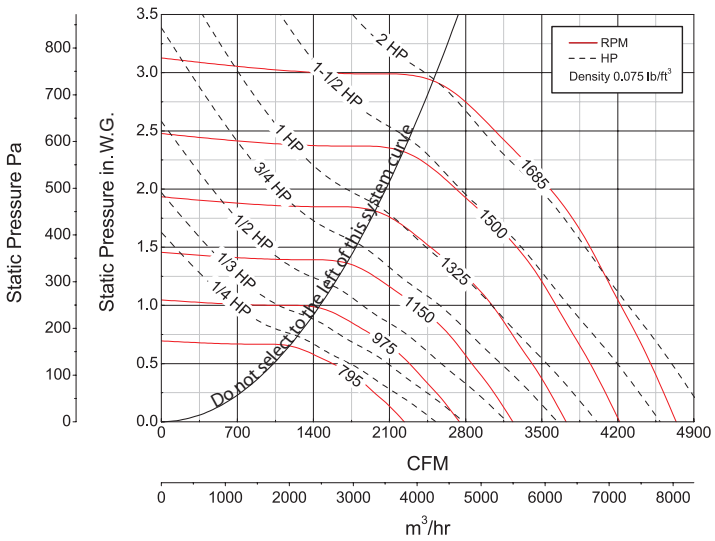
MAXIMUM BHP AT A GIVEN RPM = (RPM/1167)³
MAXIMUM RPM = 1495
TIP SPEED (ft/min.) = RPM x 4.843
MAXIMUM MOTOR FRAME SIZE = 184T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/2.92

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-180HP - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 20½ x 20½ *(521 x 521)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 190 lb. *(86 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

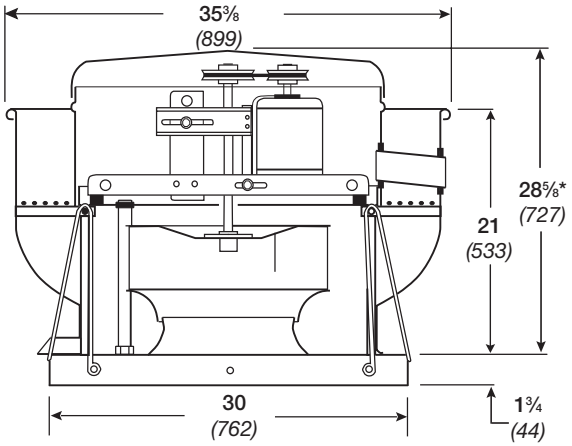
MAXIMUM BHP AT A GIVEN RPM = (RPM/1315)³
MAXIMUM RPM = 1685
TIP SPEED (ft/min.) = RPM x 4.843
MAXIMUM MOTOR FRAME SIZE = 184T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/2.92

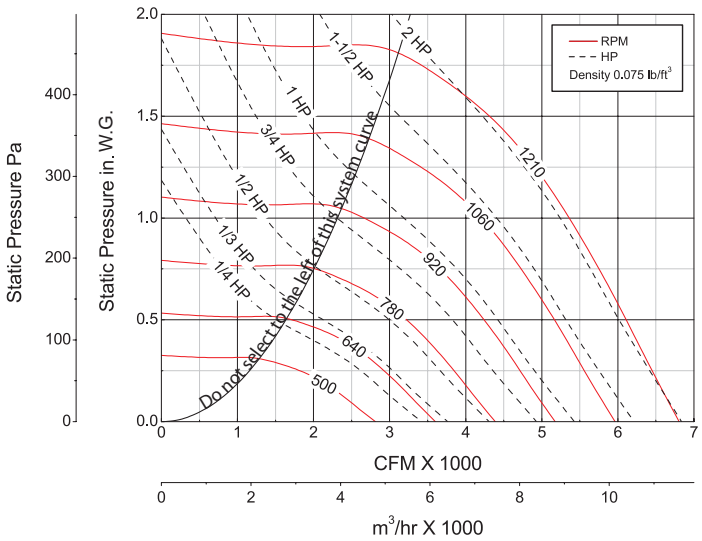
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75
USGF-180HP-4	1/4	795	CFM	1570									
			BHP	0.22									
			Sones	8.3									
		845	CFM	1799									
			BHP	0.26									
			Sones	9.5									
USGF-180HP-3	1/3	925	CFM	2104	1688								
			BHP	0.34	0.35								
			Sones	10.8	9.8								
USGF-180HP-5	1/2	1065	CFM	2581	2323	1933							
			BHP	0.50	0.52	0.53							
			Sones	13.8	12.5	12.4							
USGF-180HP-7	3/4	1215	CFM	3063	2868	2626	2286	1854					
			BHP	0.72	0.76	0.78	0.79	0.75					
			Sones	15.0	14.5	14.0	13.4	12.9					
USGF-180HP-10	1	1275	CFM	3253	3066	2853	2566	2209					
			BHP	0.82	0.87	0.89	0.91	0.89					
			Sones	16.7	15.8	15.4	14.9	14.3					
		1335	CFM	3441	3261	3075	2839	2523	2156				
			BHP	0.93	0.98	1.02	1.04	1.04	1.01				
			Sones	18.7	17.4	17.0	16.6	16.1	15.6				
USGF-180HP-15	1½	1430	CFM	3735	3566	3401	3206	2964	2669	2320			
			BHP	1.13	1.19	1.23	1.26	1.27	1.28	1.24			
			Sones	22	21	19.7	19.3	18.9	18.4	17.9			
		1530	CFM	4035	3884	3728	3574	3376	3135	2859	2534		
			BHP	1.36	1.43	1.48	1.53	1.55	1.56	1.57	1.53		
			Sones	24	23	22	21	20	19.8	19.3	18.6		
USGF-180HP-20	2	1610	CFM	4273	4136	3986	3840	3674	3485	3233	2965	2656	
			BHP	1.58	1.64	1.70	1.76	1.79	1.81	1.82	1.82	1.78	
			Sones	25	24	23	23	22	21	21	20	19.2	
		1685	CFM	4495	4369	4226	4085	3945	3768	3575	3325	3061	2766
			BHP	1.79	1.86	1.93	1.99	2.04	2.07	2.08	2.09	2.08	2.04
			Sones	27	26	25	26	24	23	22	21	21	20

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-200 - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 20½ x 20½ *(521 x 521)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 213 lb. *(97 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

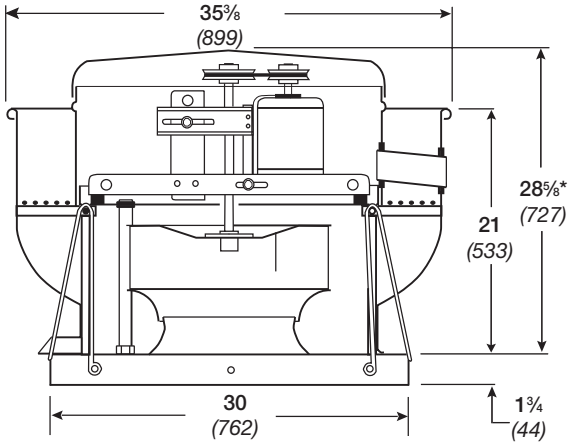
Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	1.75
USGF-200-4	1/4	500	CFM	2812	2386	1822							
			BHP	0.14	0.15	0.15							
			Sones	6.2	5.4	4.6							
		605	CFM	3403	3054	2675	2144						
			BHP	0.25	0.26	0.26	0.25						
			Sones	8.1	7.4	6.7	6.1						
USGF-200-3	1/3	665	CFM	3740	3422	3096	2699	2073					
			BHP	0.33	0.34	0.35	0.35	0.33					
			Sones	9.4	8.8	8.1	7.5	7.0					
USGF-200-5	1/2	760	CFM	4275	3994	3718	3413	3048					
			BHP	0.49	0.51	0.52	0.52	0.51					
			Sones	12.1	11.7	10.9	10.1	9.4					
USGF-200-7	3/4	820	CFM	4612	4350	4098	3828	3523	2606				
			BHP	0.61	0.63	0.65	0.65	0.65	0.61				
			Sones	14.1	14.1	13.0	12.2	11.4	10.7				
		875	CFM	4922	4676	4439	4192	3922	3240				
			BHP	0.75	0.77	0.78	0.79	0.79	0.78				
			Sones	16.3	16.3	15.2	14.7	13.5	12.4				
USGF-200-10	1	960	CFM	5400	5176	4958	4742	4508	3985	3169			
			BHP	0.98	1.01	1.03	1.04	1.04	1.04	1.00			
			Sones	18.7	18.4	17.7	17.0	16.4	15.0	14.4			
USGF-200-15	1½	1030	CFM	5793	5585	5380	5179	4968	4503	3917	2972		
			BHP	1.22	1.24	1.26	1.28	1.29	1.29	1.27	1.18		
			Sones	21	21	20	19.2	18.7	17.5	16.4	16.8		
		1100	CFM	6187	5992	5798	5610	5421	5006	4529	3861		
			BHP	1.48	1.51	1.53	1.55	1.57	1.57	1.57	1.53		
			Sones	23	23	23	22	21	20	19.3	18.6		
USGF-200-20	2	1155	CFM	6496	6311	6125	5946	5767	5383	4948	4410	3629	
			BHP	1.72	1.74	1.77	1.79	1.81	1.81	1.81	1.80	1.71	
			Sones	24	24	23	23	22	21	20	19.2	19.9	
		1210	CFM	6806	6628	6451	6279	6108	5748	5350	4892	4289	3365
			BHP	1.97	2.00	2.03	2.05	2.07	2.09	2.09	2.08	2.04	1.88
			Sones	25	24	23	23	22	21	21	19.8	19.7	21

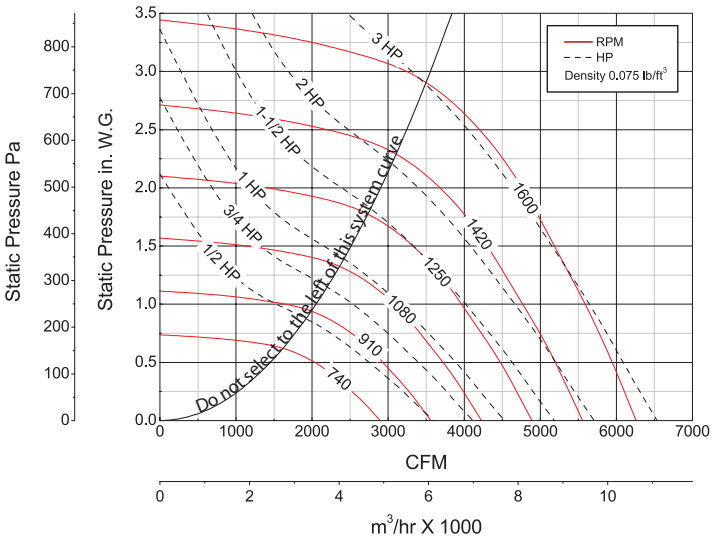
MAXIMUM BHP AT A GIVEN RPM = (RPM/946)³
MAXIMUM RPM = 1210
TIP SPEED (ft/min.) = RPM x 5.595
MAXIMUM MOTOR FRAME SIZE = 184T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/2.92

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

USGF-200HP - Belt Drive

GREENHECK
Building Value in Air.





Roof Opening = 20½ x 20½ *(521 x 521)*
Windband Thickness = 0.051 *(1.3)*
Motor Cover Thickness = 0.040 *(1.0)*
Curb Cap Thickness = 0.064 *(1.6)*
^Approximate Unit Weight = 213 lb. *(97 kg)*

All dimensions in inches *(millimeters)*.
*May be greater depending on motor.
^Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Motor hp	Fan rpm		CFM / Static Pressure in inches wg									
				0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75
USGF-200HP-5	1/2	740	CFM	2024									
			BHP	0.31									
			Sones	8.1									
		880	CFM	2779	2317								
			BHP	0.51	0.52								
			Sones	10.5	9.5								
USGF-200HP-7	3/4	945	CFM	3094	2711	2092							
			BHP	0.62	0.64	0.62							
			Sones	12.2	11.5	10.6							
		1010	CFM	3397	3067	2637							
			BHP	0.75	0.78	0.79							
			Sones	14.5	13.7	13.2							
USGF-200HP-10	1	1110	CFM	3851	3561	3242	2806						
			BHP	0.98	1.02	1.04	1.04						
			Sones	16.9	16.2	15.7	15.5						
USGF-200HP-15	1½	1190	CFM	4207	3944	3661	3321	2850					
			BHP	1.20	1.24	1.27	1.29	1.26					
			Sones	19.0	18.1	17.5	17.3	17.5					
		1270	CFM	4558	4312	4055	3789	3433	2944				
			BHP	1.44	1.49	1.53	1.56	1.56	1.53				
			Sones	22	21	20	19.7	19.3	19.8				
USGF-200HP-20	2	1335	CFM	4837	4606	4369	4116	3826	3482	2946			
			BHP	1.67	1.71	1.76	1.79	1.82	1.82	1.75			
			Sones	23	23	22	21	21	21	22			
		1400	CFM	5110	4898	4674	4436	4195	3880	3515			
			BHP	1.91	1.96	2.01	2.05	2.09	2.09	2.08			
			Sones	24	24	24	23	21	22	23			
USGF-200HP-30	3	1465	CFM	5382	5186	4972	4752	4521	4269	3956	3556		
			BHP	2.18	2.23	2.28	2.33	2.37	2.40	2.40	2.37		
			Sones	26	25	25	25	23	23	24	25		
		1600	CFM	5943	5775	5581	5385	5182	4971	4760	4476	4189	3760
			BHP	2.81	2.88	2.93	2.99	3.03	3.08	3.13	3.13	3.13	3.06
			Sones	29	28	29	30	29	26	24	26	28	31

MAXIMUM BHP AT A GIVEN RPM = (RPM/1093)³
MAXIMUM RPM = 1600
TIP SPEED (ft/min.) = RPM x 5.595
MAXIMUM MOTOR FRAME SIZE = 184T
AVERAGE DISCHARGE VELOCITY (FPM) = CFM/2.92

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. The AMCA Certified Ratings Seal applies to sone ratings only.

Spun steel exhaust fans shall be centrifugal belt driven type. Fan wheel shall be centrifugal backward inclined type. The wheel shall be constructed of steel and coated with a non-stick coating similar to Teflon® as manufactured by Du Pont®. Wheel shall include a wheel cone carefully matched to the inlet cone for precise running tolerances. Wheels shall be statically and dynamically balanced.

The fan housing shall be constructed of 16 gauge galvaneal steel with a rigid internal support structure and shall be leakproof. The fan housing shall be constructed with a one piece windband with an integral rolled bead for added strength and shall be joined to the curb cap with a continuously welded seam.

Fan's windband shall have a clean out port, a 4-inch diameter hole on the outside of the fan's windband with a grease repellent compression rubber fit, allowing access to entire wheel for cleaning.

Motors shall be heavy duty ball bearing type, carefully matched to the fan load, and furnished at the specified voltage, phase and enclosure. Drive frame assembly shall be constructed of heavy gauge galvanized steel. Motors and drives shall be mounted on heavy duty true vibration isolators, out of the airstream. Fresh air for motor cooling shall be drawn into the motor compartment through a ten square inch tube free of discharge contaminants. Motors and drives shall be readily accessible for maintenance.

Precision ground and polished 1-inch minimum diameter fan shafts shall be mounted in cast pillow block lubricatable ball bearings. Bearings shall be selected for a minimum L10 life in excess of 100,000 hours (L50 average life of 500,000 hours) at maximum cataloged operating speed. Dual drives shall be sized for a minimum of 150% of driven horsepower. Pulleys shall be of the cast type, keyed and securely attached to the wheel and motor shafts.

Motor pulleys shall be adjustable for final system balancing. All fans shall have a dual belt and pulley system. A NEMA-3R disconnect switch shall be factory installed and wired from the fan motor to a junction box installed outside the motor compartment.

All fans shall bear the AMCA Certified Ratings Seal for sound and air performance.

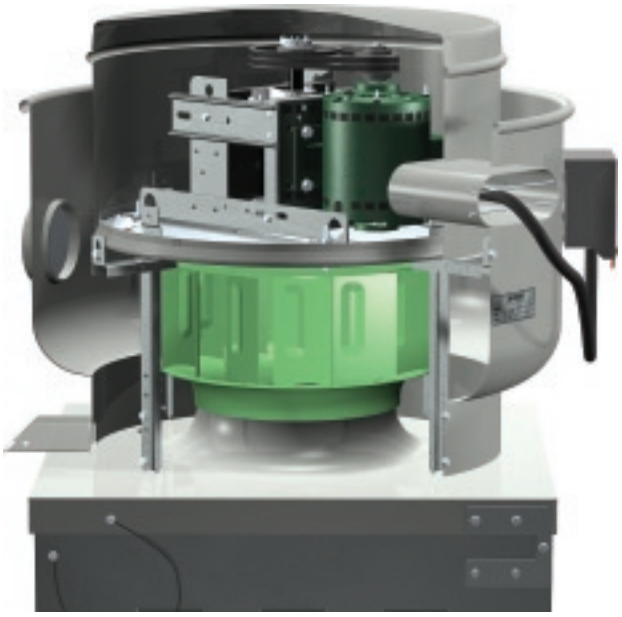
Each fan shall bear a permanently affixed manufacturer's engraved metal nameplate containing the model number and individual serial number for future identification.

Fans shall be Listed by Underwriters Laboratory for UL/cUL 762 Listed for all electrical components and grease removal.

Hinge kit shall be constructed of heavy gauge hinges and shall include hold open cables for field installation.

Grease trap shall include the drain connection. The unit shall collect grease and water from the fan and extract the grease from the water for ease of grease disposal.

Fans shall be model USGF as manufactured by Greenheck Fan Corporation in Schofield, Wisconsin.



Additional Grease Exhaust Solutions

Series C models CUE, CUBE, CW and CWB are commonly used for general clean air, mild grease and fume hood exhaust applications. Both Roof Upblast and Sidewall configurations are specifically designed to discharge air directly away from the mounting surface. These models are constructed of aluminum and use an aluminum backward inclined wheel. They are UL Listed for electrical or grease. Performance capacities ranges up to 5 in. wg *(1250 Pa)* and up to 30,000 cfm *(51,000 m³/hr)*.

Model SWB centrifugal backward inclined belt driven utility fans are designed for supply, exhaust and return air applications requiring higher discharge velocities and high static pressures. The SWB Series 100 is for general clean air applicators. The SWB Series 200 fans are constructed with heavy gauge steel. Designed for light industrial duty and grease applications with capacities ranges up to 2,7000 cfm *(45,900 m³/hr)* and up to 5 in. wg *(1250 Pa)* of static pressure. SWB fans can be mounted indoors or outdoors.

Model TCB inline belt driven fans are the ideal choice for installations with straight-through air flow in ducted systems. The wheels used are designed to provide higher efficiencies and lower sound levels. The fan itself can be mounted horizontally or vertically. Performance capacities ranges *up* to 24,000 cfm *(40,800 m³/hr)* and up to 4 in. wg *(1,000 Pa)* of static pressure.

Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of top quality, innovative air-related equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time. And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

U.S. GREEN BUILDING COUNCIL MEMBER

Prepared to Support Green Building Efforts

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Building Value in Air.

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